

#2

OIPE

RAW SEQUENCE LISTING

DATE: 05/31/2001

PATENT APPLICATION: US/09/852,386

TIME: 17:05:47

Input Set : A:\00133.US1.ST25.txt

Output Set: C:\CRF3\05312001\I852386.raw

3 <110> APPLICANT: Roberds, Steven L.
 4 Benjamin, Christopher
 5 Karnovsky, Alla M.
 6 Ruble, Cara L.
 8 <120> TITLE OF INVENTION: Human Ion Channels
 10 <130> FILE REFERENCE: 00133.US1
 C--> 12 <140> CURRENT APPLICATION NUMBER: US/09/852,386
 C--> 12 <141> CURRENT FILING DATE: 2001-05-10

ENTERED

See p. 5

12 <150> PRIOR APPLICATION NUMBER: 60/203,305
 13 <151> PRIOR FILING DATE: 2000-05-10
 15 <150> PRIOR APPLICATION NUMBER: 60/207,092
 16 <151> PRIOR FILING DATE: 2000-05-25
 18 <150> PRIOR APPLICATION NUMBER: 60/206,526
 19 <151> PRIOR FILING DATE: 2000-05-23
 21 <150> PRIOR APPLICATION NUMBER: 60/207,033
 22 <151> PRIOR FILING DATE: 2000-05-25
 24 <150> PRIOR APPLICATION NUMBER: 60/207,093
 25 <151> PRIOR FILING DATE: 2000-05-25
 27 <150> PRIOR APPLICATION NUMBER: 60/216,893
 28 <151> PRIOR FILING DATE: 2000-07-17
 30 <150> PRIOR APPLICATION NUMBER: 60/237,873
 31 <151> PRIOR FILING DATE: 2000-10-04
 33 <150> PRIOR APPLICATION NUMBER: 60/223,245
 34 <151> PRIOR FILING DATE: 2000-08-04
 36 <160> NUMBER OF SEQ ID NOS: 88
 38 <170> SOFTWARE: PatentIn version 3.0
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 41 <211> LENGTH: 630
 42 <212> TYPE: DNA
 43 <213> ORGANISM: Homo sapiens
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 50 tggacaatg ttgcgaattg tagaggcct ttgaaatgaa gttctactcc cttaaagctca 180
 52 taaggtgggg gaatgtacaa acttttaaaa aagtctgtga gttcttttgt cagtatgcta 240
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 56 gagcactgaa ggaggcaaaa tcttttgtat tttatatgcc atctttggaa ttccactctt 360
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 62 tccaattggc tttagcctga caggatccag gaggcagtat caggggcatt gtctgctttt 540
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 71 <212> TYPE: DNA
 72 <213> ORGANISM: Homo sapiens
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79 aaggacttct gcatgttcta ggggggggtg ggcacccgc tgacgctggt cactttccag      180
81 agcctgggca gaacggctga acgcggtggt gcggcgctc ctggtggcgg ccaagtgtg      240
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98 tcgtgccacc agcggcagct ccggagacga ggggccctgc cccaggagag cctgaaggat      180
100 gcggggcagt gtgaggtgga cagcctggcc ggctggaagc cctccgtgta ctacgtcatg      240
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104 attgaaggct ggagctactt tgactcactc tacttctgtt ttgtggcttt cagcaccatt      360
106 ggctttgggg acctggtcag cagccagaac gccactatg agagccaagg cctctatcgc      420
108 tttgccaact tcgtcttcat cctcatgggt gtctgctgca tctactcett gttcaatgtc      480
110 atctctatcc tcatcaaaca gtccttgaac tggatcctga ggaaaatgga cagcgggtgc      540
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127 aaatactgca gacagttcaa tgatactttt ctgttcaga tctgagtcct cagggagcct      180
129 gttcaagtgt gatcccaag tccaaagggg tctccaaatc gcttcttgac ccactaacgc      240
131 aatccctctg ccgaaatctt tccctgggtg ggacaaggtc atgcacacat agatacaacc      300
133 tccacctcga gggctctgag tgcaggaaaag ggtcctagct atggcccagt cccattccca      360
135 tgtttacctc agactcccc caacctcata caatcctgga gactttcaag tggactcaga      420
137 ggccaactcc ctccctccta ggtactgcaa gtccctgggc tggetctgtt cctgacctg      480
139 gggacgctgg tcattctcat ctccccaccc atggtcttca gccatgtgga gggctggagc      540
141 ttcagcgagg gcttctactt tgctttcatc actctcagca ccattggctt tggggactat      600
143 gttgttggtg agaacaaaac agtcacatta tctcaaggtg ggggtgccca ctgggatttg      660
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147 <211> LENGTH: 302
148 <212> TYPE: DNA
149 <213> ORGANISM: Homo sapiens
151 <400> SEQUENCE: 5
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154 taagatgtag ataagatggt tgccaggatg tcgcctgtgt ccgtgagaac gaggaacatc      120
156 aggggggatac caaagagagc atagagcatg cacaagtact tgccaagcct ggtgacgggg      180
158 tagatgtagc catagcctga aaaagaagat ggagcttaga gtttgcactt ggcccccttc      240
160 ctttttcccc ccaaaagctt taaagagacc ttctgccatc tcccctcctt ggcatgacat      300
162 tt                                           302

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Input Set : A:\00133.US1.ST25.txt

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173 ggtgacgaag cagaaagtag agcgagtcca cgtagtccca gccctccacg ctggtgtaca      120
175 tggccgaggg gcagcaggac agcagcacgg cgaacaggcc caggatgagc agcacgtggg      180
177 acaccgaggg cttccagccc gccaggctgt cggcctccga gagcgcgagg ccgcgggcga      240
179 aggtggcggg cagcaggccg ctgcggcgca gctggcgctc ccggcaggcg cgcatgatga      300
181 aggccagcag cgagatgatg cgctccagga agagggtgaa gaacaggatg gtcccagcgc      360
183 agccgaacag cccgtagggc atgaggaagg ccttcccgcc caccgtcgcg ggggtggtca      420
185 tgccgaacac tgtggagaca gggcagggtc agcgcggtcc tggccgcgca ggtggtcctc      480
187 actgggcgag ggtggggggg gtggggggcg gggcatgcag gtgcttgccg ggctcctatc      540
189 tcgagtggca ccactcaggt ggaggaagaa cagcacttag tcatttatct cccttgggtg      600
191 cacttaatat gtttcctgat cttggcagcc cctaaactga tggaggagac atggcccttc      660
193 atcttgggga cctataaacc caagtggttg ggacaggtag tcactaggaa ggacctatca      720
195 tgacac                                           726

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208 gatcgcaaga gtcctctctg gcattgcggg cagcaccgcg tgtccatttt cctcaggatc      180
210 cagttcaagg actgtttgat gaggatagag atgacattga acaaggagta gatgcagcag      240
212 acacccatga ggatgaagac gaagttggca aagcgataga ggccttggct ctcatagtgg      300
214 gcgttctggc tgctgaccag gtcccaaag ccaatgggtg tgaaagccac aaaacagaag      360
216 tagagtgagt caaagtagct ccagccttca atgggggtgt acatggctga ggcgcagcaa      420
218 gagatgagga tggaggctgt gcataggatc agcatgacgt agtacacgga gggcttccag      480
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224 <211> LENGTH: 442
225 <212> TYPE: DNA
226 <213> ORGANISM: Homo sapiens
228 <400> SEQUENCE: 8
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231 ctggatcctg tcaggctaaa gccaattgga tcgcagtggg tagaatttaa atatgacaca      120
233 gtactcactc gaaacacctt ctccactctt gcaatgcttt tcccaaagat ggttccaagt      180
235 tgggtctcaa ttccagccaa taagaaacca aagagtggaa ttccaaagat ggcatataaa      240
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239 tatgaaaaag agggagagtg gcagagaaat tagcatactg accaaagaac tcacagactt      360
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246 <210> SEQ ID NO: 9
247 <211> LENGTH: 628
248 <212> TYPE: DNA
249 <213> ORGANISM: Homo sapiens

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256	ctccatact	ccccactccc	gccccagga	gcctgtggga	gaggcttatg	gtctttggg	180
258	gcgcgctcat	gtgccaggga	catggggaag	ggtagccgga	gccagcaca	agggcaggca	240
260	gggcatggag	cagctcacca	agaagatggc	ttcaatgtga	ccgatgccat	ggcgaggga	300
262	ggagcccagc	cggccccga	ccccctccag	taggatccca	aacagcggaa	tccccaccag	360
264	cgcataaaag	atgcagaaga	ggcgcccggc	atctgtgcgc	agggccacat	tgccatagcc	420
266	tgggcagagg	ggcgatgcag	gaagtctagg	ggccacctgg	gacccctccg	tctcccttgc	480
268	accttcccc	atgaggaagc	tccttgccgc	ccccacatg	ccaatcccct	ccccaccga	540
270	tgggtggtgat	gatggtccct	gagaaaaaga	aggcgctgcc	caggtcccaa	gctgagtggc	600
272	tgctgttgct	ggtcgagttg	gtttctgg				628

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277 <212> TYPE: DNA

278 <213> ORGANISM: Homo sapiens

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285	gtgtggctag	gaaactggac	cattacctag	aatatggagc	agcagtcctc	gtgctcctgg	180
287	tgtgtgtgtt	tggactgggt	gcccactggc	tggcctgcat	atggtatagc	atcgagact	240
289	acgaggtcat	tgatgaagtc	actaacacca	tccaaataga	cagttggctc	taccagctgg	300
291	ctttgagcat	tgggactcca	tatcgctaca	ataccagtgc	tgggatattg	gaaggaggac	360
293	ccagcaagga	ttcattgtac	gtgtcctctc	tctactttac	catgacaagc	cttacaacca	420
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312	accagtgtca	gcgggatgcc	cagcacggcg	tagaacatgc	agaaggcctt	gcccgcacgc	180
314	gtgccagggt	cagcgtgccc	ataacctgtg	ggaaggggat	gagaagaaca	gagagagcaa	240
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318	gcagagggg	ctggtactgg	gggaatttcc	tctgcagggt	agaggggcgt	ggccatatat	360
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322	caggggggta	ggaacatttc	agtagggagg	gagttgggat	gtgctgggat	ggaagggaag	480
324	agaaaaagaa	gaaccaatgt	cacttgacct	atgccactga	gaggggatgg	aggaacattc	540
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328	agaactccaa	aagtaccaag	cccaagggag	aaacctctct	atgtccacta	tggattgaca	660
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335 <212> TYPE: DNA

336 <213> ORGANISM: Homo sapiens

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339 gcagttgcag tgtgttctgt ttctctagcg catgagatct ctcaaacagc tccatgctgc      60
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345 tggggcacca cttggagagg agggggcggg taaagaaagg gaattttcgg aaccgattat      240
347 aagatgtaga taagatggtt gccaggatgt cgcctgtgtc cgtgagaacg aggaacatca      300
349 gggggatacc aaagagagca tagagcatgc acaagtactt gccaaagcctg gtgacggggt      360
351 agatgtagcc atagcctgaa aaagaagatg gagcttagag tttgcatctg gccccttccc      420
353 tttttccccc caaaagcttt aaagagacct tctgccatct cccctccttg gcatgacatt      480
355 ttacacattg tttttgaaaa tactcatctc aaagcattca gccactggtc tggcattagg      540
357 cttgctttgg tgggagggaa aggagtgaag cagcttcctt ttaggataag gagcaactga      600
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364 <212> TYPE: DNA

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372 gactccaagg ccgtccagcc ctcatgtac ttaaagatga cagcagggat cgtcacaac      180
374 acaatgcagc cggccaagat gaacaggatg gttgagatga cccgatctt ggtctgactc      240
376 acttgctttt tctaggaaga gcaaaggaga aagataggca agtcagcggc atcaccttgg      300
378 attcaggata tagatgcaca gaaaacggta ctgtgtcagt gacttttaac ctttctctgg      360
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382 tcagaatttt tcaagtggtc taggaggttc tcaggctccc tgaagcctgt tcgtggacac      480
384 caggtcaaac aaacaaaaaa atcctgctta gccaatgctt tgaatgtttc ttgcatgggt      540
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393 <212> TYPE: DNA

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401 cacacgcccc ccttcccttg caggatatgg gaacctggca cccagcacag aggcagggtca      180
403 ggtcttctgt gtcttctatg ccctgttggg catcccgtt aacgtgatct tctcaacca      240
405 cctgggcaca gggctgcgtg cccatctggc cgccattgaa agatgggagg accgtcccag      300
407 gcgctcccag gtatgcccc taactccctt acaggcctgc tgtgacagat ctgttgcaag      360
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411 tgcctgtgaa agaggaaggg tgaaggcagg gttgggcaga gtggggagtt ggatctctat      480
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420 <212> TYPE: DNA

421 <213> ORGANISM: Homo sapiens

423 <400> SEQUENCE: 15

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426 cacaccagct gcctgattga ggcaggatg aaaacctggc tggttccgcc cactgtggga      120

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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/852,386

DATE: 05/31/2001

TIME: 17:05:48

Input Set : A:\00133.US1.ST25.txt

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L:12 M:270 C: Current Application Number differs, Replaced Current Application No

L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:1356 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45

L:1359 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45

L:1456 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:49

L:1459 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:49